

### Enzyme Virtual Lab

Go to <http://bioweb.wku.edu/courses/Biol114/enzyme/enzyme1.asp>

Answer the following Questions on paper or on this word document.

1. We start with 3 ml of  $H_2O_2$  from your bathroom cabinet. Added Catalase. Wait three minutes. Measure and find 1 ml of  $H_2O_2$  remaining. How much  $H_2O_2$  was consumed in the reaction?
2. If we repeated the experiment, measured and found 2 ml of  $H_2O_2$  remaining, would this second reaction have a higher or lower rate of reaction?
3. When you added  $H_2O_2$ , did you add Substrate or Enzyme?
4. Which reaction occurred in the tubes?
5. Which tube had the highest rate of reaction?
6. What variable caused the difference in reaction rates for each tube?
7. Why did the reaction rate decrease as the temperature changed from  $34^\circ C$  to  $44^\circ C$ ?
8. Graph your results. Make sure you are graphing substrate remaining in the tubes. Provide your own scales for the graph.

Amt. of  
substrate  
remaining  
(mL)

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Temperature  $^\circ C$

9. **Explain** the effectiveness of catalase at different temperatures in terms of the graph. Remember that you graphed the amount of substrate left in the tube, not the amount that reacted with the catalase.